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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,278	03/16/2001	Kazuki Sato	108964	4975

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EXAMINER

TUGBANG, ANTHONY D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 01/13/2004

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,278

Applicant(s)

SATO ET AL.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12, 17-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12, 17-23 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/26/03 (Paper No. 18) has been entered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Method of Manufacturing a Magnetoresistive Element Substructure.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 6, 7, 9-12, 17, 18, 20-23 and 25 rejected under 35 U.S.C. 102(b) as being anticipated by Krounbi 4,939,837.

Regarding Claim(s) 6 and 17, Krounbi discloses a method of manufacturing a magnetoresistive device substructure comprising: forming a magnetoresistive element (left MR sensor 20 in Fig. 4) and an indicator (right MR sensor 20 in Fig. 4) having a shape similar to the magnetoresistive element and located in a specific position with respect to the magnetoresistive element; forming a soft magnetic layer (magnetic shield layer 28) in a specific position by aligning the soft magnetic layer with the specific position of the indicator. The indicator 20 is considered to be observed while forming the soft magnetic layer to the extent that the soft magnetic layer 28 is formed directly over the indicator 20 (shown in Fig. 6).

Regarding Claim(s) 25, the claimed “first patterned thin film” and “second patterned thin film” are read as the left MR sensor 20 (in Fig. 4) and magnetic shield layer 28 (in Fig. 6), respectively.

Regarding Claim(s) 7 and 18, the indicator (right MR sensor 20 in Fig. 4) is considered to be a “dummy element” to the extent that at the time of manufacturing, the indicator is not, or is not capable of functioning as the magnetoresistive element.

Regarding Claim(s) 9 and 20, the claimed “overcoat layer” is read as insulating layer 40 with an opening or trench formed in it or a portion of it (in Fig. 5), which corresponds to the indicator 20.

Regarding Claim(s) 10, 11, 21 and 22, Krounbi further teaches forming an overcoat layer (insulating layer 40) covering the soft magnetic layer 28 and the indicator 20 (see col. 3, lines 50-54) and forming an opening or trench in the overcoat layer 40 by reactive ion etching a portion of the overcoat layer 40 (see col. 3, lines 55-65). The claimed “film” for stopping ion

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etching is read as substrate 10 since etching stops at the top surface of the film 10 (as shown in Fig. 5).

Regarding Claim(s) 12 and 23, Krounbi further teaches that the indicator 20 is located at a position at which the substructure is divided to fabricate the magnetoresistive device or multiple magnetoresistive devices (see col. 4, lines 1-5).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krounbi in view of Simon et al 3,787,964.

Krounbi, as relied upon above, teaches the claimed manufacturing method including forming multiple magnetic layers or additional bias layers (see col. 3, lines 43-45) in which at least one those layers can be read as a dummy layer. However, Krounbi does not mention that the soft magnetic layer and dummy magnetic layer can be formed at the same time.

Simon teaches that multiple magnetic layers can be formed simultaneously through deposition to produce a vast quantity of magnetic heads (see col. 5, lines 6-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the soft magnetic and dummy layers of Krounbi at the same time, as taught by Simon, to positively manufacture a vast quantity of magnetic heads.

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Response to Arguments

7. Applicant's arguments with respect to Claims 6-12, 17-23 and 25 have been considered but are moot in view of the new ground(s) of rejection.

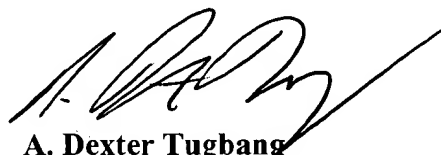
Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.


A. Dexter Tugbang
Primary Examiner
Art Unit 3729

January 8, 2004